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SEARCH REQUEST FORM

Requester's Full Name: Satya Gudibande Examiner # : _____ Date: 7-15-09

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To ensure an efficient and quality search, please attach a copy of the cover sheet, claims, and abstract or fill out the following:

Title of Invention: _____

Inventors (please provide full names): _____

_____

Earliest Priority Date: _____

Search Topic:

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc., if known.

For Sequence Searches Only ***Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.***

Hydrolysis of glycocyamine to yield glycine

REGISTRY RECORD FOR GLYCOCYAMINE

=> fil reg; d ide
FILE 'REGISTRY' ENTERED AT 15:03:57 ON 15 JUL 2009

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 13 JUL 2009 HIGHEST RN 1162342-48-4
DICTIONARY FILE UPDATES: 13 JUL 2009 HIGHEST RN 1162342-48-4

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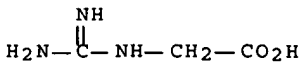
http://www.cas.org/support/stngen/stndoc/properties.html

L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2009 ACS on STN
RN 352-97-6 REGISTRY
ED Entered STN: 16 Nov 1984
CN Glycine, N-(aminoiminomethyl)- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Glycine, N-amidino- (8CI)
OTHER NAMES:
CN α-Guanidinoacetic acid
CN β-Guanidinoacetic acid
CN 2-[[Amino(imino)methyl]amino]acetic acid
CN Acetic acid, [(aminoiminomethyl)amino]-
CN Betacyamine
CN Betasyamine
CN Glycocyamine
CN Guanidine, (carboxymethyl)-
CN Guanidineacetic acid
CN Guanidinoacetic acid
CN Guanidoacetic acid
CN Guanidylacetic acid
CN Guanyl glycine
CN N-Amidinoglycine
CN NSC 1901
CN NSC 227847
CN NSC 26360
DR 13516-06-8
MF C3 H7 N3 O2
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOSIS, BIOTECHNO, CA, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, CSCHEM, DDFU, DRUGU, EMBASE, GMELIN*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, RTECS*,

SPECINFO, TOXCENTER, USPAT2, USPATFULL, USPATOLD
(*File contains numerically searchable property data)
Other Sources: EINECS**
(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

933 REFERENCES IN FILE CA (1907 TO DATE)
19 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
936 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> s 352-97-6/crn
L2 32 352-97-6/CRN

TEXT SEARCH

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=> => fil capl; d que l19; fil biosis; d que l27
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FILE COVERS 1907 - 15 Jul 2009  VOL 151 ISS 3
FILE LAST UPDATED: 14 Jul 2009  (20090714/ED)
REVISED CLASS FIELDS (/NCL) LAST RELOADED:  Apr 2009
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE:  Apr 2009

CAplus now includes complete International Patent Classification (IPC)
reclassification data for the second quarter of 2009.

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information.  This enhancement may impact record import into
database management software.  For additional information, refer
to NEWS 22.
'OBI' IS DEFAULT SEARCH FIELD FOR 'CAPLUS' FILE


L1             1 SEA FILE=REGISTRY SPE=ON  ABB=ON  GLYCOCYAMINE/CN
L2            32 SEA FILE=REGISTRY SPE=ON  ABB=ON  352-97-6/CRN
L3           936 SEA FILE=CAPLUS SPE=ON  ABB=ON  L1
L4            41 SEA FILE=CAPLUS SPE=ON  ABB=ON  L2
L5           967 SEA FILE=CAPLUS SPE=ON  ABB=ON  (L3 OR L4)
L14       292352 SEA FILE=CAPLUS SPE=ON  ABB=ON  HYDROLY?/OBI
L16          100 SEA FILE=CAPLUS SPE=ON  ABB=ON  L1/P OR L2/P
L17           18 SEA FILE=CAPLUS SPE=ON  ABB=ON  L5 AND L14 NOT L16
L18           35 SEA FILE=CAPLUS SPE=ON  ABB=ON  L5(L)(INHIBITION/OBI OR
                 CYLINDROSPERMOPSIN/OBI OR ACYLATION/OBI OR DAVIDIGENIN/OBI OR
                 CHLORINATION/OBI)
L19           12 SEA FILE=CAPLUS SPE=ON  ABB=ON  L17 NOT L18


FILE 'BIOSIS' ENTERED AT 15:32:51 ON 15 JUL 2009
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FILE COVERS 1926 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT
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RECORDS LAST ADDED: 8 July 2009 (20090708/ED)

BIOSIS has been augmented with 1.8 million archival records from 1926
through 1968.  These records have been re-indexed to match current
BIOSIS indexing.


L1             1 SEA FILE=REGISTRY SPE=ON  ABB=ON  GLYCOCYAMINE/CN
L20          200 SEA FILE=BIOSIS SPE=ON  ABB=ON  L1
L21          449 SEA FILE=BIOSIS SPE=ON  ABB=ON  BETA!YAMINE OR GLYCOCYAMINE OR
                 GUANIDIN!ACETIC OR ((GUANIDIN# OR GUANIDYL)(W) ACETIC) OR
                 GUANIDYLACETIC OR AMIDINOGLYCINE OR NSC(W)(1901 OR 227847 OR
                 26360)
L23       177055 SEA FILE=BIOSIS SPE=ON  ABB=ON  HYDROLY?
L24           17 SEA FILE=BIOSIS SPE=ON  ABB=ON  (L20 OR L21) AND L23
L26           48 SEA FILE=BIOSIS SPE=ON  ABB=ON  (?SYNTHESI? OR FORM? OR
                 PRODUC?)(2A)(L20 OR L21)
L27           14 SEA FILE=BIOSIS SPE=ON  ABB=ON  L24 NOT L26


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=> d que l36

L28          220 SEA BETA!YAMINE OR GLYCOCYAMINE OR GUANIDIN!ACETIC OR ((GUANIDI
                 N# OR GUANIDYL)(W) ACETIC) OR GUANIDYLACETIC OR AMIDINOGLYCINE
                 OR NSC(W)(1901 OR 227847 OR 26360)
L29       107271 SEA GLYCINE
L30       257737 SEA HYDROLY?
L31       482505 SEA DEGRAD?
L36            1 SEA L28 AND L29 AND (L30 OR L31)


=> dup rem l36,l19,l27

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PROCESSING COMPLETED FOR L36
PROCESSING COMPLETED FOR L19
PROCESSING COMPLETED FOR L27
L37 25 DUP REM L36 L19 L27 (2 DUPLICATES REMOVED)
ANSWER '1' FROM FILE BIOTECHNO
ANSWERS '2-13' FROM FILE CAPLUS
ANSWERS '14-25' FROM FILE BIOSIS

=> d iall 1; d ibib abs hitind 2-13; d iall 14-25; fil hom

L37 ANSWER 1 OF 25 BIOTECHNO
DUPLICATE
ACCESSION NUMBER: 1987:17161149 BIOTECHNO Full-text
TITLE: A new enzymic determination of guanidinoacetic acid in urine
AUTHOR: Shirokane Y.; Utsushikawa M.; Nakajima M.-O.
CORPORATE SOURCE: Department of Clinical Chemistry, Kikkoman General Hospital, Chiba-ken, Japan.
SOURCE: Clinical Chemistry, (1987), 33/3 (394-397)
CODEN: CLCHAU ISSN: 0009-9147
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
ABSTRACT: We developed and evaluated a colorimetric method for enzymic determination of guanidinoacetic acid (GAA) in urine. Endogenous urinary urea was first eliminated by urease (EC 3.5.1.5), and the added urease was then removed from the sample by centrifugal ultrafiltration. GAA in the ultrafiltrate was subsequently hydrolyzed by guanidinoacetate amidinohydrolase (EC 3.5.3.2) to glycine and urea. The latter substance produced an orange chromogen reacting with o-phthalaldehyde and N-(1-naphthyl)-N'-diehtylethylenediamine, the absorbance of which at 465 nm was linearly related to concentrations as high as 200 mg/L for standard solutions of GAA. Analytical recovery of GAA added to urine ranged from 94 to 112% (mean 101%) and the within-run and between-run precision (CVs) of the method for the urinary GAA determination averaged 2.2 and 3.5%, respectively. Results correlated well (r = 0.983) between the present method and a high-performance liquid chromatographic method. The proposed method is accurate and simple. We saw a great decrease in urinary GAA of patients with suspected or proven renal insufficiency as compared with that of healthy volunteers.
CONTROLLED TERM: *guanidinoacetic acid; *kidney disease; urease; enzyme assay; human; urine; kidney; normal human; diagnosis; clinical article; human cell
CAS REGISTRY NUMBER: (guanidinoacetic acid) 352-97-6, 4294-32-0; (urease) 9002-13-5

L37 ANSWER 2 OF 25 CAPLUS DUPLICATE 2
ACCESSION NUMBER: 1928:27129 CAPLUS Full-text

DOCUMENT NUMBER: 22:27129
ORIGINAL REFERENCE NO.: 22:3174b-c
TITLE: Glycocyamase
AUTHOR(S): Karashima, Junji
SOURCE: Z. physiol. Chem. (1928), 177, 42-6
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB Beef liver contains an enzyme which hydrolyzes glycocyamine into glycine and urea. The enzyme was not found in the kidney, pancreas, spleen or lung. It is possible that glycocyamine is an intermediate product of arginine metabolism. Its homolog, guanidinobutyric acid, is known to undergo a similar enzymic cleavage into urea and aminobutyric acid, and both of these guanidino acids might be formed in successive stages in the oxidation of arginine. The enzyme was not found in chicken liver or kidney.

CC 11A (Biological Chemistry: General)

IT 352-97-6, Glycocyamine
(enzyme hydrolyzing)

L37 ANSWER 3 OF 25 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2008:465380 CAPLUS Full-text
DOCUMENT NUMBER: 149:29843
TITLE: Effects In Vitro of Guanidinoacetate on Adenine Nucleotide Hydrolysis and Acetylcholinesterase Activity in Tissues from Adult Rats
AUTHOR(S): Spanevello, Roselia Maria; Souza Wyse, Angela Terezinha; Mazzanti, Cinthia Melazzo; Schmatz, Roberta; Stefanello, Naiara; Goncalves, Jamile Fabbrin; Bagatini, Margarete; Battisti, Vanessa; Morsch, Vera Maria; Schetinger, Maria Rosa Chitolina
CORPORATE SOURCE: Departamento de Bioquimica, Instituto de Ciencias Basicas da Saude, Universidade Federal do Rio Grande do Sul, Porto Alegre, 90035-003, Brazil
SOURCE: Neurochemical Research (2008), 33(6), 1129-1137
CODEN: NEREDZ; ISSN: 0364-3190
PUBLISHER: Springer
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Guanidinoacetate methyltransferase (GAMT) deficiency is a disorder of creatine metabolism characterized by low plasma creatine concns. in combination with elevated guanidinoacetate (GAA) concns. The aim of this work was to investigate the in vitro effect of guanidinoacetate in NTPDase, 5'-nucleotidase and acetylcholinesterase activities in the synaptosomes, platelets and blood of rats. The results showed that in synaptosomes the NTPDase and 5'-nucleotidase activities were inhibited significantly in the presence of GAA at concns. of 50, 100, 150 and 200 μM ($P < 0.05$). However, in platelets GAA at the same concns. caused a significant increase in the activities of these two enzymes ($P < 0.05$). In relation to the acetylcholinesterase activity, GAA caused a significant inhibition in the activity of this enzyme in blood at concns. of 150 and 200 μM ($P < 0.05$), but did not alter the acetylcholinesterase activity in synaptosomes from the cerebral cortex. Our results suggest that alterations caused by GAA in the activities of these enzymes may contribute to the understanding of the neurol. dysfunction of GAMT-deficient patients.

CC 14-14 (Mammalian Pathological Biochemistry)
Section cross-reference(s): 7

IT Brain
(cerebral cortex; guanidinoacetate effects on adenine nucleotide hydrolysis and acetylcholinesterase activity in tissues from adult rats in model of guanidinoacetate methyltransferase deficiency)

IT Blood
Blood platelet
Disease models
Nervous system, disease
Rat
Rattus norvegicus
(guanidinoacetate effects on adenine nucleotide hydrolysis and acetylcholinesterase activity in tissues from adult rats in model of guanidinoacetate methyltransferase deficiency)
IT Synapse
(synaptosome; guanidinoacetate effects on adenine nucleotide hydrolysis and acetylcholinesterase activity in tissues from adult rats in model of guanidinoacetate methyltransferase deficiency)
IT 352-97-6 9029-75-8, Guanidinoacetate methyltransferase
RL: ADV (Adverse effect, including toxicity); BSU (Biological study, unclassified); BIOL (Biological study)
(guanidinoacetate effects on adenine nucleotide hydrolysis and acetylcholinesterase activity in tissues from adult rats in model of guanidinoacetate methyltransferase deficiency)
IT 9000-81-1, Acetylcholinesterase 9000-95-7, Apyrase 9027-73-0, 5'-Nucleotidase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(guanidinoacetate effects on adenine nucleotide hydrolysis and acetylcholinesterase activity in tissues from adult rats in model of guanidinoacetate methyltransferase deficiency)
REFERENCE COUNT: 71 THERE ARE 71 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 4 OF 25 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2001:469305 CAPLUS Full-text
DOCUMENT NUMBER: 135:58155
TITLE: Method for diagnosing kidney function
INVENTOR(S): Nakamura, Osamu
PATENT ASSIGNEE(S): Nippon Zoki Pharmaceutical Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001174459	A	20010629	JP 1999-358230	19991217
PRIORITY APPLN. INFO.:			JP 1999-358230	19991217

AB A convenient and reliable method is provided for diagnosing kidney function by measuring glycocyamidine in a body fluid or urine sample collected from an animal. No glycocyamidine is detected with blood serum samples from healthy persons, while it is detected with all serum samples from kidney failure patients. More than five times quantity of glycocyamidine in an average is detected with urine samples from the patients in comparison with healthy persons.
IC ICM G01N033-50
ICS G01N030-88; G01N033-493; G01N033-70
CC 9-3 (Biochemical Methods)
Section cross-reference(s): 14
IT Animal
Blood analysis
Blood serum
Body fluid

Diagnosis
HPLC
Hydrolysis
Urine analysis
(method for diagnosing kidney function)

IT 352-97-6, Glycocyamine
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(method for diagnosing kidney function)

L37 ANSWER 5 OF 25 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1998:189090 CAPLUS Full-text
DOCUMENT NUMBER: 128:286908
ORIGINAL REFERENCE NO.: 128:56705a,56708a
TITLE: A potentiometric study of guanidinoacetic acid complexation with the ions Mn(II), Co(II), Ni(II), Cu(II), Zn(II), Cd(II) and Pb(II)
AUTHOR(S): Felcman, Judith; De Miranda, Jussara Lopes
CORPORATE SOURCE: Departamento de Quimica, PUC/ RJ, Marques de Sao Vicente, Rio de Janeiro, 22453-900, Brazil
SOURCE: Journal of the Brazilian Chemical Society (1997), 8(6), 575-580
CODEN: JOCSET; ISSN: 0103-5053
PUBLISHER: Sociedade Brasileira de Quimica
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The guanidinoacetic acid (GAA) complexation with some ions of biol. interest, such as Mn(II), Co(II), Ni(II), Cu(II), Zn(II), Cd(II) and Pb(II) has been investigated. GAA was prepared and analyzed. The dissociation consts. of its complexes and hydroxy complexes with the above ions have been potentiometrically determined Most of the ions formed complexes of the type MGAA, M(GAA)2 and M(GAA)3. Zn(II) and Cu(II) did not form M(GAA)3 and M(GAA)(OH)3. The hydrolysis of CuGAA and ZnGAA begins near pH 6-7; for the other MGAA complexes it begins near pH 8. Above these pH values, polymerized, hydrolyzed species predominated.

CC 68-3 (Phase Equilibriums, Chemical Equilibriums, and Solutions)
Section cross-reference(s): 6, 34, 72, 78

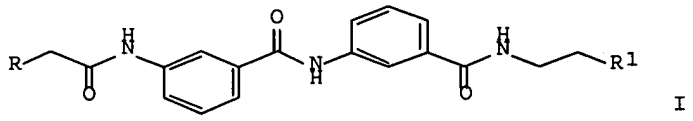
IT Complexation
Dissociation constant
Formation constant
Hydrolysis
(potentiometric study of guanidinoacetic acid complexation with ions Mn(II), Co(II), Ni(II), Cu(II), Zn(II), Cd(II) and Pb(II))

IT 352-97-6D, metal complexes 7439-92-1D, Lead, complexes with guanidinoacetic acid, properties 7439-96-5D, Manganese, complexes with guanidinoacetic acid, properties 7440-02-0D, Nickel, complexes with guanidinoacetic acid, properties 7440-43-9D, Cadmium, complexes with guanidinoacetic acid, properties 7440-48-4D, Cobalt, complexes with guanidinoacetic acid, properties 7440-50-8D, Copper, complexes with guanidinoacetic acid, properties 7440-66-6D, Zinc, complexes with guanidinoacetic acid, properties
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); FORM (Formation, nonpreparative); PROC (Process); RACT (Reactant or reagent)
(potentiometric study of guanidinoacetic acid complexation with ions Mn(II), Co(II), Ni(II), Cu(II), Zn(II), Cd(II) and Pb(II))

IT 352-97-6, Guanidinoacetic acid 14280-50-3, Lead(2+), properties 14701-22-5, Nickel(2+), properties 15158-11-9, Copper(2+), properties 16397-91-4, Manganese(2+), properties 22537-48-0, Cadmium(2+),

properties 22541-53-3, Cobalt(2+), properties 23713-49-7, Zinc(2+), properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(potentiometric study of guanidinoacetic acid complexation with ions Mn(II), Co(II), Ni(II), Cu(II), Zn(II), Cd(II) and Pb(II))
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 6 OF 25 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1991:514219 CAPLUS Full-text
DOCUMENT NUMBER: 115:114219
ORIGINAL REFERENCE NO.: 115:19577a,19580a
TITLE: Synthesis, DNA binding properties and biological evaluation of novel oligo-meta-benzamides related to netropsin
AUTHOR(S): Debart, F.; Gosselin, G.; Rayner, B.; Le Ber, P.; Auclair, C.; Balzarini, J.; De Clercq, E.; Paoletti, C.; Imbach, J. L.
CORPORATE SOURCE: Lab. Chim. Bio-Org., Univ. Montpellier II, Montpellier, 34095, Fr.
SOURCE: European Journal of Medicinal Chemistry (1991), 26(3), 261-71
CODEN: EJMCA5; ISSN: 0223-5234
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 115:114219
GI



I

AB A series of oligo-met-benzamides, e.g., I [R = NHC(:NH)NH2, R1 = C(:NH)NH2; CH2NH(CH2)4NH2; R = CH2CONH(CH2)3NH(CH2)4NH2, R1 = CH2NH(CH2)4NH2] structurally related to the natural agent netropsin have been synthesized. Their binding consts. to double-stranded polynucleotides as well as their cytostatic activity against tumor cell lines and their in vitro activity against a wide variety of DNA and RNA viruses have been determined Most of these analogs retain the DNA binding capacity of the parent compound but with a notable decrease of selectivity and affinity. Like netropsin, the evaluated analogs did not show significant cytostatic and antiviral activity.
CC 26-6 (Biomolecules and Their Synthetic Analogs)
Section cross-reference(s): 1, 10
IT 14901-20-3, Guanidinoacetic acid hydrochloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, with aminobenzamides)
IT 16360-91-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and sequential acidic hydrolysis and amination of)

L37 ANSWER 7 OF 25 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1986:602729 CAPLUS Full-text
DOCUMENT NUMBER: 105:202729
ORIGINAL REFERENCE NO.: 105:32525a,32528a

TITLE: Molecular recognition between oligopeptides and nucleic acids: novel imidazole-containing oligopeptides related to netropsin that exhibit altered DNA sequence specificity

AUTHOR(S): Lown, J. William; Krowicki, Krzysztof; Bhat, U. Ganapathi; Skorobogaty, Andrew; Ward, Brian; Dabrowiak, James C.

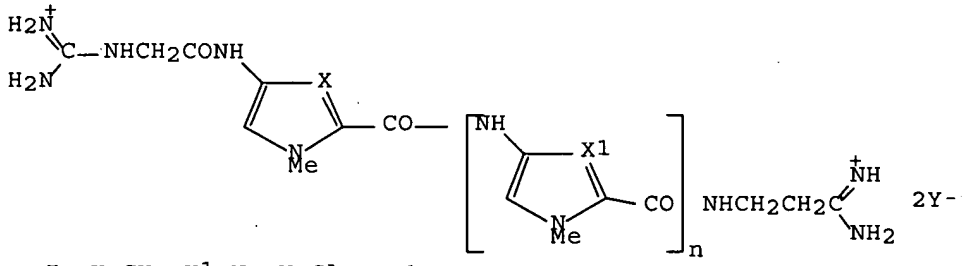
CORPORATE SOURCE: Dep. Chem., Univ. Alberta, Edmonton, AB, T6G 2G2, Can.

SOURCE: Biochemistry (1986), 25(23), 7408-16
CODEN: BICHAW; ISSN: 0006-2960

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



I, X=CH, X^1=N, Y=Cl, n=1
II, X=N, X^1=CH, Y=Cl, n=1
III, X=X^1=N, 2Y=SO_4, n=1
IV, X=X^1=N, 2Y=SO_4, n=2
V, X=X^1=CH, 2Y=SO_4, n=1

AB Oligopeptides, I [104394-12-9], II [101809-75-0], III [101772-43-4], and (IV) [104394-13-0], that are structurally related to the antiviral antitumor antibiotic netropsin, but in which each of the pyrrole units is successively replaced by an imidazole moiety, were prepared These compds. bound to duplex DNA with consts. in the range (1.06-1.98) + 106 M-1 but not to single-stranded DNA. Since they bind to T4 DNA, it is inferred that, like the parent antibiotic netropsin V [1438-30-8], they are also minor-groove selective. I-IV exhibited a progressively decreasing preference for AT sites in binding studies with both native DNS and synthetic oligonucleotides and a corresponding increasing acceptance of GC base pairs. Footprinting expts., with a 139 base pair HindIII/NciI restriction fragment from pBR 322 DNA, revealed that these lexitropsins, or information-reading oligopeptides, recognize more sites than the parent netropsin. In addition, some regions of enhanced nuclease action as the result of drug binding to the fragment were identified. The diimidazole compound in particular recognized GC-rich sites, implying the formation of new H bonds between G-C(2)NH2 in the minor groove and the addnl. N3 imidazole nitrogens. It is clear however that, since the lexitropsins appear to tolerate the original (AT)4 site, an N-methylimidazole group on the ligand will permit either a GC or AT base pair in the binding sequence. Another factor that may be significant in mol. recognition is the high neg. electrostatic potential of A·T regions of the minor groove, which is likely to strongly influence binding of these cationic species to DNA. This approach may ultimately permit the structurally rational alteration of sequence specificity in the mol. recognition of oligopeptides for DNA.

CC 1-3 (Pharmacology)

Section cross-reference(s): 6
IT 104394-03-8 104394-06-1
RL: BIOL (Biological study)
(hydrolysis and reaction with ammonia)
IT 104394-02-7
RL: BIOL (Biological study)
(hydrolysis and reaction with ammonia of)
IT 14901-20-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with aminoimidazolyl derivative)

L37 ANSWER 8 OF 25 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1966:483759 CAPLUS Full-text
DOCUMENT NUMBER: 65:83759
ORIGINAL REFERENCE NO.: 65:15737d-f
TITLE: Specificity of different deamidinases
AUTHOR(S): Baret, Raymond; Mourgue, Marcel; Broc, Alfred
CORPORATE SOURCE: Fac. Med. Pharm., Marseilles, Fr.
SOURCE: Bulletin des Travaux de la Societe de Pharmacie de Lyon (1965), 9(3), 181-93
CODEN: BTSLAV; ISSN: 0037-9107
DOCUMENT TYPE: Journal
LANGUAGE: French
AB Using dog and bovine arginases, rabbit heteroarginase, and Raia clavata guanidinobutyrase, enzymic hydrolysis of different guanidino derivs. (agmatine, L-arginine, L-arginic acid, γ-guanidinobutyric acid, and some guanidinocarboxylic acids) was examined in 4, 24, or 48 h. by determining urea and monosubstituted guanidino groups. Arginase binds to the substrate only when the carboxyl group has an α-amino group free or included in a peptide bond and is separated from the guanidino group by 4 CH2 groups. Heteroarginase specificity is less rigid because neither an α-amino group nor a definite chain length is required. γ-Guanidinobutyrase hydrolyzes only derivs., the carboxyl and guanidino groups of which have no substituents and are separated by 3, 4, (maximum hydrolysis), or 6 CH2 groups.
CC 57 (Enzymes)
IT 2446-72-2, Glycine, N-(N-amidinoglycyl)-
(hydrolysis by arginase)
IT 157-07-3, Valeric acid, 5-guanidino-2-hydroxy-, L- 353-09-3, β-Alanine, N-amidino- 462-93-1, Valeric acid, 5-guanidino- 463-00-3, Butyric acid, 4-guanidino- 6659-35-4, Hexanoic acid, 6-guanidino- 7010-89-1, Butyric acid, 4-guanidino-3-hydroxy- 68141-53-7, Isoserine, N-amidino-
(hydrolysis by guanidinobutyrase and heteroarginase)
IT 352-83-0, Butyric acid, 3-guanidino- 352-97-6, Glycine, N-amidino- 3164-99-6, Butyric acid, 2-guanidino- 4381-80-0, Methionine, N-amidino- 6133-30-8, Aspartic acid, N-amidino- 13551-03-6, Serine, N-amidino- 13551-04-7, Alanine, N-amidino-3-phenyl- 13551-05-8, Tyrosine, N-amidino- 13551-07-0, Threonine, N-amidino- 13551-09-2, Cystine, N,N'-diamidino- 67337-40-0, Alanine, N-amidino-
(hydrolysis by heteroarginase)
IT 74-79-3, Arginine
(hydrolysis of, by arginase and heteroarginase)

L37 ANSWER 9 OF 25 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1951:19457 CAPLUS Full-text
DOCUMENT NUMBER: 45:19457
ORIGINAL REFERENCE NO.: 45:3459b-d
TITLE: The specificity of action of certain bacterial deguanidases on precursors of urea, and on arginine

dihydrolase
AUTHOR(S): Roche, Jean; Lacombe, Gabrielle; Girard, Henri
CORPORATE SOURCE: College of France, Paris
SOURCE: Biochimica et Biophysica Acta (1950), 6, 210-16
CODEN: BBACAQ; ISSN: 0006-3002
DOCUMENT TYPE: Journal
LANGUAGE: French
AB cf. C.A. 43, 3061g. Creatine (I) is hydrolyzed by actively growing cultures of Pseudomonas eisenbergii to form 1 mole of urea/mole of substrate, and a smaller amount of NH3, presumably from sarcosine. Optimum pH for the reaction is 6.7. Creatinine (II) and glycocyamine (III) are not attacked. Arginine (IV) is split directly to give NH3. Resting cultures hydrolyze IV but are inactive toward I. The creatinase is inhibited by NaN3, KCN, and Na diethyldithiocarbamate (V) and is activated by Fe++. Newly isolated Pseudomonas ovalis hydrolyzes III readily, I slowly, and II not at all. After repeated transplantation on a medium containing I, it actively decompose all 3 derivs. with the formation of urea. The creatininase differs from creatinase in that it is not inhibited by V or activated by Fe++, and both enzymes are distinguishable from arginine dihydrolase. None of the substrates was attacked by a cell-free extract
CC 11C (Biological Chemistry: Microbiology)
IT 57-00-1, Creatine 60-27-5, Creatinine 352-97-6, Glycocyamine
(hydrolysis by Pseudomonas eisenbergii and P. ovalis)
IT 74-79-3, Arginine
(hydrolysis of, by Pseudomonas eisenbergii and P. ovalis)

L37 ANSWER 10 OF 25 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1947:22539 CAPLUS Full-text
DOCUMENT NUMBER: 41:22539
ORIGINAL REFERENCE NO.: 41:4525e-g
TITLE: Inability of hepatic arginase to hydrolyze various substituted guanidines, and the specificity of the enzyme
AUTHOR(S): Roche, Jean; Mourgue, Marcel
SOURCE: Compt. rend. (1947), 224, 860-2
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB While the guanido group of arginine and of its hydroxy analog (δ-guanidyl-α-hydroxyvaleric acid) is readily split off by arginase, the following other guanido compds. are not hydrolyzed by arginase: α-guanidyl-β-hydroxypropionic acid, α-guanidyl-β-(p-hydroxyphenyl)propionic acid, α-guanidyl-ε-aminocaproic acid,
α,δ-diguanidylvaleric acid, guanidylacetic acid (glycocyamine), α-guanidylpropionic acid, β-guanidylpropionic acid, α-guanidylsuccinic acid, guanidylethanol, 3-guanidyl-1-propanol, 4-guanidyl-1-butylamine (agmatine) and its N-thiomethyl derivative, tetramethylenediguanidine (arcaine), and decamethylenediguanidine (synthalin). It is concluded that an amino or hydroxy group α to a carboxyl is a necessary prerequisite for arginase activity, and that an α-guanido group cannot take the place of the α-amino or hydroxyl groups.
CC 11A (Biological Chemistry: General)
IT Chemical constitution
(hydrolysis and, of guanidines)
IT 352-97-6, Glycocyamine 353-09-3, β-Alanine, N-amidino-
462-64-6, Valeric acid, 5-guanidino-2-hydroxy- 4353-52-0, Guanidine, (2-hydroxyethyl)- 4362-87-2, Guanidine, (3-hydroxypropyl)- 6133-30-8, Aspartic acid, N-amidino- 6713-94-6, Ornithine, N2,N5-diamidino-
13551-05-8, Tyrosine, N-amidino- 67337-40-0, Alanine, N-amidino-
91724-85-5, Lysine, N2-amidino- 108865-65-2, Serine, N-amidino-

707542-88-9, Methanesulfenamide, N-4-guanidinobutyl- 874520-48-6, Agmatine, N1-thiomethyl-
(arginase action on)
IT 113-00-8, Guanidine
(derivs., hydrolysis by arginase)
IT 9000-96-8, Arginase
(guanidine hydrolysis by, and specificity of)
IT 301-15-5, Synthalin 306-60-5, Agmatine 544-05-8, Arcaine
(hydrolysis by arginase)
IT 74-79-3, Arginine
(hydrolysis of, by arginase)

L37 ANSWER 11 OF 25 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1948:21512 CAPLUS Full-text
DOCUMENT NUMBER: 42:21512
ORIGINAL REFERENCE NO.: 42:4621h-i
TITLE: Enzymic degradation of glycocyamine and various substituted guanidines not hydrolyzable by arginase
AUTHOR(S): Mourgue, Marcel; Lacombe, Gabrielle
CORPORATE SOURCE: Univ. Marseille, Fr.
SOURCE: Comptes Rendus des Seances de la Societe de Biologie et de Ses Filiales (1947), 141, 824-6
CODEN: CRSBAW; ISSN: 0037-9026
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB cf. C.A. 41, 2453a, 4525f. Animal tissues, Aspergillus, Mucor, E. coli, B. pyocyaneus, Proteus vulgaris, and Staph. aureus have no action on glycocyamine at pH 7-9. Some unidentified bacteria from rabbit feces, and from soil decomp, glycocyamine at pH 8.8, and their enzyme system also decomps, methylguanidine, guanido-β-hydroxypropionic acid, α-guanidosuccinic acid, creatinine, and agmatine and its thiomethyl derivative The enzyme probably contains a bivalent metal; it is inhibited by very low concns, of Na diethyldithiocarbamate, NaN3, NaCN, and dithizone; and activated by cysteine, Mn++, and Fe++, but not by Mg++, Co++, and Zn++.
CC 11A (Biological Chemistry: General)
IT 352-97-6, Glycocyamine
(enzyme action on)

L37 ANSWER 12 OF 25 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1947:29369 CAPLUS Full-text
DOCUMENT NUMBER: 41:29369
ORIGINAL REFERENCE NO.: 41:5906e-f
TITLE: Electrophoretic determination of changes in the charge of ovalbumin after action of chloropicrin on the sulfhydryl groups
AUTHOR(S): Fredericq, Eugene; Desreux, Victor
CORPORATE SOURCE: Univ. Liege, Belg.
SOURCE: Bulletin de la Societe de Chimie Biologique (1947), 29, 105-8
CODEN: BSCIA3; ISSN: 0037-9042
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB Ovalbumin, with all free and masked -SH groups blocked by reaction with chloropicrin, behaved like untreated ovalbumin in the Tiselius apparatus, except that the isoelec. point was displaced about 0.2 pH unit toward the acid side.
CC 11A (Biological Chemistry: General)
IT Chemical constitution
(hydrolysis and, of guanidines)

IT 352-97-6, Glycocyamine 353-09-3, β-Alanine, N-amidino-
462-64-6, Valeric acid, 5-guanidino-2-hydroxy- 4353-52-0, Guanidine,
(2-hydroxyethyl)- 4362-87-2, Guanidine, (3-hydroxypropyl)- 6133-30-8,
Aspartic acid, N-amidino- 6713-94-6, Ornithine, N2,N5-diamidino-
13551-05-8, Tyrosine, N-amidino- 67337-40-0, Alanine, N-amidino-
91724-85-5, Lysine, N2-amidino- 108865-65-2, Serine, N-amidino-
707542-88-9, Methanesulfenamide, N-4-guanidinobutyl- 874520-48-6,
Agmatine, N1-thiomethyl-
(arginase action on)

L37 ANSWER 13 OF 25 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1947:29370 CAPLUS Full-text
DOCUMENT NUMBER: 41:29370
ORIGINAL REFERENCE NO.: 41:5906f-g
TITLE: Specificity of hepatic arginase
AUTHOR(S): Roche, Jean; Mourgue, Marcel
CORPORATE SOURCE: Univ. Marseille
SOURCE: Comptes Rendus des Seances de la Societe de Biologie et de Ses Filiales (1946), 140(No. 9/10), 310-11
CODEN: CRSBAW; ISSN: 0037-9026
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB See C.A. 41, 4525f.
CC 11A (Biological Chemistry: General)
IT Chemical constitution
(hydrolysis and, of guanidines)
IT 352-97-6, Glycocyamine 353-09-3, β-Alanine, N-amidino-
4353-52-0, Guanidine, (2-hydroxyethyl)- 4362-87-2, Guanidine,
(3-hydroxypropyl)- 6713-94-6, Ornithine, N2,N5-diamidino- 13551-05-8,
Tyrosine, N-amidino- 67337-40-0, Alanine, N-amidino- 91724-85-5,
Lysine, N2-amidino- 108865-65-2, Serine, N-amidino- 707542-88-9,
Methanesulfenamide, N-4-guanidinobutyl- 874520-48-6, Agmatine,
N1-thiomethyl-
(arginase action on)
IT 113-00-8, Guanidine
(derivs., hydrolysis by arginase)
IT 9000-96-8, Arginase
(guanidine hydrolysis by, and specificity of)
IT 301-15-5, Synthalin 306-60-5, Agmatine 544-05-8, Arcaine
(hydrolysis by arginase)
IT 74-79-3, Arginine
(hydrolysis of, by arginase)

L37 ANSWER 14 OF 25 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
ACCESSION NUMBER: 1977:150290 BIOSIS Full-text
DOCUMENT NUMBER: PREV197763045154; BA63:45154
TITLE: STRUCTURE ACTIVITY RELATIONSHIPS OF GAMMA AMINO BUTYRIC-ACID AND ITS RELATIVES ON THE EXCITABILITY OF AN IDENTIFIED MOLLUSCAN GIANT NEURON ACHATINA-FULICA.
AUTHOR(S): TAKEUCHI H; YOKOI I; HIRAMATSU M
SOURCE: Comparative Biochemistry and Physiology C Comparative Pharmacology, (1977) Vol. 56, No. 1, pp. 63-73.
CODEN: CBPCBB. ISSN: 0306-4492.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: Unavailable

ABSTRACT:A spontaneously firing giant neuron (TAN, tonically autoactive neuron) sensitive to GABA (inhibition) was identified in the subesophageal ganglia of A. fulica. The effect of GABA and its 80 relatives were examined (by bath application) on TAN excitability. Among them, GABA showed the strongest inhibitory effect (critial concentration .apprx. 10-5 g/ml). 4-amino-3-hydroxybutanoic acid, 4-amino-2-hydroxybutanoic acid, 5-amino pentanoic acid and guanidinoacetic acid at 10-4 g/ml showed inhibitory effects. The GABA effect on the TAN neuromembrane was due to direct hyperpolarization, by means of the local GABA administration on the TAN surface (microdrop application). No antagonistic action of 3 convulsant alkaloids (bicuculline, strychnine and picrotoxin) to the GABA effect on TAN excitability was detected. To indicate the electrical resistance of the TAN neuromembrane, its current-voltage relationships (I-V curve) were measured, by applying a transmembrane triangular current. The I-V curve measured in the GABA application at 3 + 10-5 g/ml was concordant in the wide range of potential level with that of the normal state, when 2 I-V curves were superimposed by using the firing level as the common standard. GABA was identified in the subesophageal ganglia of A. fulica; its quantity was augmented after hydrolysis of ganglionic extract.

CONCEPT CODE:
Biochemistry studies - General 10060
Biochemistry studies - Proteins, peptides and amino acids 10064
Biophysics - General 10502
Biophysics - Methods and techniques 10504
Biophysics - Membrane phenomena 10508
Physiology - Methods 12006
Nervous system - General and methods 20501
Nervous system - Physiology and biochemistry 20504
Pharmacology - Drug metabolism and metabolic stimulators 22003
Pharmacology - Neuropharmacology 22024
Plant physiology - Chemical constituents 51522
Pharmacognosy and pharmaceutical botany 54000
Invertebrata: comparative, experimental morphology, physiology and pathology - Mollusca 64026

INDEX TERMS:
Major Concepts
Biochemistry and Molecular Biophysics; Membranes (Cell Biology); Nervous System (Neural Coordination); Pharmacology; Physiology

INDEX TERMS:
Miscellaneous Descriptors
4 AMINO-3-HYDROXY BUTANOIC-ACID 4 AMINO-2-HYDROXY BUTANOIC-ACID 5 AMINO PENTANOIC-ACID GUANIDINO ACETIC-ACID BICUCULLINE STRYCHNINE PICRO TOXIN CURRENT VOLTAGE RELATION MEMBRANE POTENTIAL ELECTRO PHYSIOLOGY

ORGANISM:
Classifier
Fumariaceae 26088
Super Taxa
Dicotyledones; Angiospermae; Spermatophyta; Plantae
Taxa Notes
Angiosperms, Dicots, Plants, Spermatophytes, Vascular Plants

ORGANISM:
Classifier
Loganiaceae 26300
Super Taxa
Dicotyledones; Angiospermae; Spermatophyta; Plantae
Taxa Notes
Angiosperms, Dicots, Plants, Spermatophytes, Vascular Plants

ORGANISM:
Classifier

Menispermaceae 26370
Super Taxa
Dicotyledones; Angiospermae; Spermatophyta; Plantae
Taxa Notes
Angiosperms, Dicots, Plants, Spermatophytes, Vascular Plants
ORGANISM: Classifier
Papaveraceae 26515
Super Taxa
Dicotyledones; Angiospermae; Spermatophyta; Plantae
Taxa Notes
Angiosperms, Dicots, Plants, Spermatophytes, Vascular Plants
ORGANISM: Classifier
Gastropoda 61200
Super Taxa
Mollusca; Invertebrata; Animalia
Taxa Notes
Animals, Invertebrates, Mollusks
REGISTRY NUMBER: 107-92-6 (BUTANOIC-ACID)
660-88-8 (5 AMINO PENTANOIC-ACID)
352-97-6 (GUANIDINO ACETIC -ACID)
485-49-4 (BICUCULLINE)
57-24-9 (STRYCHNINE)
124-87-8 (PICRO TOXIN)
13477-53-7 (4 AMINO-2-HYDROXY BUTANOIC-ACID)

L37 ANSWER 15 OF 25 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
ACCESSION NUMBER: 1968:81184 BIOSIS Full-text
DOCUMENT NUMBER: PREV19684900081187; BA49:81187
TITLE: Properties and amino acid composition of purified ATP: guanidinoacetate phosphotransferase [Engl. sum.].
Original Title: Proprietes et composition en acides amines de L'ATP: Guanidinoacetate phos-photransferase purifiee [Engl. sum.].
AUTHOR(S): PRADEL, LOUISE-ANNE; KASSAB, RHIDA; CONLAY, CAROLINE; VAN THOAI, NGUYEN
CORPORATE SOURCE: Coll. Fr., Paris, Fr.
SOURCE: BIOCHIM BIO PHYS ACTA, (1968) Vol. 154, No. 2, pp. 305-314.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: Unavailable
ENTRY DATE: Entered STN: May 2007
Last Updated on STN: May 2007
ABSTRACT:ATP: guanidinoacetate phosphotransferase (EC 2.7.3.1) has been purified by (NH4)2SO4 fractionation, molecular sieving on Sephadex G-100 and DEAE-Sephadex chromatography. The enzyme, which has been purified 30-fold, appears to be homogeneous on analytical centrifugation, ion-exchange chromatography and gel electrophoresis. The molecular weight value obtained by analytical centrifugation (89 000 [plus or minus] 2200) is near that calculated from amino acid composition (87 500). Glycocyamine and creatine kinases have very similar amino acid compositions. In the former enzyme, there is more tyrosine, glycine, alanine than in the latter and twice less the number of histidine residues. It contains 20 to 22 -SH groups per molecule and no cystine. On fingerprint analysis of the tryptic hydrolysate of S-[I-14C]succinylglycocyamine kinase about half the number of peptides which would be expected from the 95 arginine + lysine residues are revealed. This fact suggests that the Nephthys coeca muscle glycocyamine kinase is

composed of 2 similar subunits. Two neutral labelled peptides are found; one of them, containing much label, may correspond to the cysteine active site.
ABSTRACT AUTHORS: Authors
CONCEPT CODE: Invertebrata: comparative, experimental morphology, physiology and pathology - Annelida 64030
INDEX TERMS: Major Concepts
Zoology
INDEX TERMS: Parts, Structures, & Systems of Organisms
muscle: muscular system
INDEX TERMS: Chemicals & Biochemicals
alanine; cystine; arginine; S-[I-14C]succinylglycocyamine; lysine; creatine kinases; glycine; kinases; creatine; glycocyamine kinase [EC 2.7.3.1]; EC 2.7.3.1; guanidinoacetate; amino acid; succinylglycocyamine kinase; phosphotransferase; histidine; cysteine; Nephthys coeca muscle glycocyamine kinase; guanidinoacetate phosphotransferase; tyrosine; ATP
ORGANISM: Classifier
Annelida 65000
Super Taxa
Invertebrata; Animalia
Organism Name
annelid (common)
Taxa Notes
Animals, Annelids, Invertebrates
ORGANISM: Classifier
Polychaeta 65500
Super Taxa
Annelida; Invertebrata; Animalia
Organism Name
Nephthys (genus)
Taxa Notes
Animals, Annelids, Invertebrates
REGISTRY NUMBER: 302-72-7 (alanine)
923-32-0 (cystine)
7200-25-1 (arginine)
70-54-2 (lysine)
56-40-6 (glycine)
57-00-1 (creatine)
9026-60-2 (glycocyamine kinase)
9026-60-2 (EC 2.7.3.1)
4294-32-0 (guanidinoacetate)
9031-09-8 (phosphotransferase)
4998-57-6 (histidine)
3374-22-9 (cysteine)
556-03-6 (tyrosine)
111839-44-2 (ATP)

L37 ANSWER 16 OF 25 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
ACCESSION NUMBER: 1968:203 BIOSIS Full-text
DOCUMENT NUMBER: PREV19684900000203; BA49:203
TITLE: Research on pre-biological evolution: I. Amino acid composition of microspheres obtained from ammonium cyanide Society of Chemical Biology: Colloquium on the Biochemical aspects of phylogenesis, Montpellier, Fr., 28-29 October, 1966 [Engl. and Ger. sum.].
Original Title: Recherches sur revolution pre-biologique: I. Composition en amino-acides des microspherules obtenues

a partir du cyanure d'ammonium In: Societe de Chimie Biologique: Colloque sur les aspects biochimiques de la Phylogenese, Montpellier, Fr., 28-29 octobre 1966 [Engl. and Ger. sum.].
AUTHOR(S): LABADIE, M.; JENSEN, R.; NEUZIL, E.
CORPORATE SOURCE: Fac. Med. and Pharm., Bordeaux, Fr.
SOURCE: BULL SOC CHIM BIOL, (1967) Vol. 49, No. 6, pp. 673-682.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: Unavailable
ENTRY DATE: Entered STN: May 2007
Last Updated on STN: May 2007
ABSTRACT:Heating an aqueous solution of ammonium cyanide leads to the formation of a black precipitate and of a colored supernatant. When cooling, the supernatant forms microspheres, the morphological aspect of which are described, as well as some physico-chemical properties. The acid ***hydrolysis*** of the microspheres liberates amino acids, urea, guanidine, ***glycocyamine*** ; their chemical composition is similar to the composition of the hydrosoluble polymers present in the supernatant and of the insoluble black precipitate. The amino acids of the different fractions do not appear to be linked by peptidic bonds. ABSTRACT AUTHORS: Authors
CONCEPT CODE: Evolution 01500
INDEX TERMS: Major Concepts
Evolution and Adaptation
INDEX TERMS: Chemicals & Biochemicals
ammonium; Amino acid; urea; cyanide; ammonium cyanide; guanidine; glycocyamine
REGISTRY NUMBER: 14798-03-9 (ammonium)
57-13-6 (urea)
57-12-5 (cyanide)
12211-52-8 (ammonium cyanide)
113-00-8 (guanidine)

L37 ANSWER 17 OF 25 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
ACCESSION NUMBER: 1959:36757 BIOSIS Full-text
DOCUMENT NUMBER: PREV19593300036787; BA33:36787
TITLE: The enzymatic synthesis of S-adenosyl-L-homocysteine from adenosine and homocysteine.
AUTHOR(S): de la HABA, G.; CANTONI, G. L.
CORPORATE SOURCE: U. S. Publ. Health Serv., Bethesda, Md.
SOURCE: JOUR BIOL CHEM, (1959) Vol. 234, No. 3, pp. 603-608.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: Unavailable
ENTRY DATE: Entered STN: May 2007
Last Updated on STN: May 2007
ABSTRACT:An enzyme was found in rat liver which condenses adenosine and L-homocysteine to yield S-adenosyl-L-homocysteine which was identified (a) chromatographically, (b) by methylation to S-adenosyl-L-methionine identified by paper ionophoresis and enzymatically, and (c) by elementary analysis of the crystalline product as well as by the melting point of this material and its picrate derivative. The equilibrium of this reaction lies far in the direction of condensation. However, S-adenosyl-L-homocysteine will be hydrolyzed by this enzyme if the products of the reaction, adenosine and L-homocysteine, are removed enzymatically. A convenient method for the enzymatic synthesis of S-adenosyl-L-homocysteine and its isolation and crystallization is described. A rapid spectrophotometric assay for S-adenosyl-L-homocysteine has been developed with the use of the condensing enzyme coupled to adenosine deaminase and thetin-homocysteine methylpherase. The enzyme is highly specific for

adenosine and L-homocysteine. No other nucleoside or mercaptan tested would substitute. On methylation of S-adenosyl-L-homocysteine, S-adenosyl-L-methionine is obtained which was shown to be only 50% effective in the enzymatic methylation of guanidinoacetic to creatine. The significance of this result is discussed. ABSTRACT AUTHORS: Auth. summ

CONCEPT CODE: Enzymes - General and comparative studies: coenzymes 10802

INDEX TERMS: Major Concepts
Enzymology (Biochemistry and Molecular Biophysics)

INDEX TERMS: Parts, Structures, & Systems of Organisms
liver: digestive system

INDEX TERMS: Chemicals & Biochemicals
S-adenosyl-L-homocysteine; L-homocysteine; nucleoside; adenosine deaminase [EC 3.5.4.4]; homocysteine; thetin-homocysteine methylpherase [EC 2.1.1.3]; S-adenosyl-L-methionine; creatine; adenosine

ORGANISM: Classifier
Muridae 86375
Super Taxa
Rodentia; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
rat (common)
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Rodents, Vertebrates

REGISTRY NUMBER: 979-92-0 (S-adenosyl-L-homocysteine)
6027-13-0 (L-homocysteine)
214692-96-3 (adenosine deaminase)
214692-96-3 (EC 3.5.4.4)
6027-13-0 (homocysteine)
29908-03-0 (S-adenosyl-L-methionine)
57-00-1 (creatine)
58-61-7 (adenosine)

L37 ANSWER 18 OF 25 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

ACCESSION NUMBER: 1957:21694 BIOSIS Full-text
DOCUMENT NUMBER: PREV19573100021741; BA31:21741
TITLE: Metabolism of guanidil derivatives. VI. Degradation of guanidic derivatives in Streptomyces griseus.
Original Title: Metabolisme des derives guanidyles. VI. Degradation des derives guani-diques chez Streptomyces griseus (Waksman).
AUTHOR(S): VAN THOAI, NGUYEN-; HATT, J. L.; AN, TRAN THI; ROCHE, J.
CORPORATE SOURCE: Lab. Biochim. gen. comparee, Coll. France, Paris
SOURCE: BIOCHIM ET BIOPHYS ACTA, (1956) Vol. 22, No. 2, pp. 337-341.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: Unavailable
ENTRY DATE: Entered STN: May 2007
Last Updated on STN: May 2007

ABSTRACT:S. griseus contains a system of deguanidases which hydrolyze , at a pH optimum of 7.5, various mono-substituted guanidines (e.g., L. arginine, guanidino-acetic acid, -propionic acid, -butyric acid, streptidine, streptomycin). These hydrolases differ from arginase, heteroarginase and metaarginase. S. griseus contains also a decarboxylase system which oxidizes arginine to guanidinobutyramide. This oxidative system is adaptive and its substrate, arginine, serves them as inductor. ABSTRACT AUTHORS: Auth. summ

CONCEPT CODE: Bacteriology, general and systematic 30000
INDEX TERMS: Major Concepts
Bacteriology
INDEX TERMS: Chemicals & Biochemicals
streptomycin; arginine; -butyric acid; guanidino -acetic acid; -propionic acid; arginase [EC 3.5.3.1]; guanidinobutyramide
ORGANISM: Classifier
Bacteria 05000
Super Taxa
Microorganisms
Organism Name
bacteria (common)
Taxa Notes
Bacteria, Eubacteria, Microorganisms
ORGANISM: Classifier
Streptomycetes and Related Genera 08840
Super Taxa
Actinomycetes and Related Organisms; Eubacteria; Bacteria; Microorganisms
Organism Name
Streptomyces griseus (species)
Taxa Notes
Bacteria, Eubacteria, Microorganisms
REGISTRY NUMBER: 57-92-1 (streptomycin)
7200-25-1 (arginine)
9000-96-8 (arginase)
9000-96-8 (EC 3.5.3.1)

L37 ANSWER 19 OF 25 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
ACCESSION NUMBER: 1958:22251 BIOSIS Full-text
DOCUMENT NUMBER: PREV19583200022326; BA32:22326
TITLE: The annelid phosphagens.
AUTHOR(S): HOBSON, G. E.; REES, K. R.
CORPORATE SOURCE: Univ. Coll., London
SOURCE: BIOCHEM JOUR, (1955) Vol. 61, No. 4, pp. 549-552.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: Unavailable
ENTRY DATE: Entered STN: May 2007
Last Updated on STN: May 2007
ABSTRACT:On the basis of behavior on hydrolysis, creatine phosphate was found in tissue extracts of Glycera convoluta, Eunice harrassi, Scholoplos armiger, Lumbriconereis impatiens, Hermione hystrix arginine phosphate was found in Nephthys hombergii, Leiochone clypeata, Amphitrite edwardsi, Polymnia nebulosa, Ophelia bicornis. Both were found in extracts of Nereis diversicolor, Glycera gigantea, Halosydna gelatinosa, Eulalia viridis, Travisia forbesii and Myxicola infundtbulum. By paper chromatography, the phosphagen in Glycera gigantea and Glycera convoluta was identified as creatine phosphate, in Arenicola marina as, taurocy-amine phosphate, in Nereis diversicolor as ***glycocyamine*** phosphate, and in Maia squinado as arginine phosphate.
ABSTRACT AUTHORS: L. B. Jaques
CONCEPT CODE: Biochemistry studies - General 10060
INDEX TERMS: Major Concepts
Biochemistry and Molecular Biophysics
INDEX TERMS: Parts, Structures, & Systems of Organisms
tissue
INDEX TERMS: Chemicals & Biochemicals
glycocyamine; phosphate; creatine phosphate;

arginine
ORGANISM: Classifier
Angiospermae 25200
Super Taxa
Spermatophyta; Plantae
Organism Name
annelid (common)
Taxa Notes
Angiosperms, Plants, Spermatophytes, Vascular Plants
ORGANISM: Classifier
Malacostraca 75112
Super Taxa
Crustacea; Arthropoda; Invertebrata; Animalia
Organism Name
Maia squinado (species)
Taxa Notes
Animals, Arthropods, Crustaceans, Invertebrates
ORGANISM: Classifier
Polychaeta 65500
Super Taxa
Annelida; Invertebrata; Animalia
Organism Name
Eunice (genus)
Eulalia viridis (species)
Ophelia bicornis (species)
Leiochone (genus)
Glycera convoluta (species)
Lumbriconereis impatiens (species)
Myxicola (genus)
Nephthys hombergii (species)
Glycera gigantea (species)
Arenicola marina (species)
Travisia forbesii (species)
Halosydna (genus)
Nereis diversicolor (species)
Amphitrite edwardsi (species)
Polymnia nebulosa (species)
Taxa Notes
Animals, Annelids, Invertebrates
REGISTRY NUMBER: 14265-44-2 (phosphate)
67-07-2 (creatine phosphate)
7200-25-1 (arginine)

L37 ANSWER 20 OF 25 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
ACCESSION NUMBER: 1955:29610 BIOSIS Full-text
DOCUMENT NUMBER: PREV19552900029674; BA29:29674
TITLE: Chemical factors controlling the growth of the decotylized pea seedling.
AUTHOR(S): FRIES, NILS
SOURCE: SYMBOLAE BOT UPSALIENSIS, (1954) Vol. 13, No. 1, pp. 1-83.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: Unavailable
ENTRY DATE: Entered STN: May 2007
Last Updated on STN: May 2007
ABSTRACT:When pea seedlings deprived of cotyledons were cultivated in test tubes with a synthetic medium under aseptic conditions in darkness, growth rate of root decreased considerably in one week, shoot remained almost constant for two or three weeks; root growth continued when medium was supplemented with

organic chemicals yeast nucleic acid, hydrolyzed casein, or yeast extract. Adenine, free or linked to ribose in adenosine and adenylic acid, produced same effect as nucleic acid; other nucleic acid constituents were inactive; guanine and uracil displayed characteristic inhibitory effect on lateral root dev. Only glycine, arginine and probably glutamic acid, of all amino acids composing casein hydrolysate, supported seedling root growth. All amino acids were inhibitory in high concentration, except glutamic acid. Hydroxyproline depressed growth rate of shoot and root even at low 0.03 mM concentration. Arginine could be exchanged for ornithine or citrulline. Glycine was active also in peptide linkage, but not as a constituent of ***glycocyamine.*** Among other organic substances tested, urea, creatine, creatinine, indoleacetic acid, succinic and citric acids, showed no growth-promoting effect. First effect produced by active substances was promotion of root growth; arginine, glycine, adenine and hypoxanthine also promoted increase in dry weight of plant. Development of lateral roots stimulated by hypoxanthine and ornithine. Combination tests showed neither ornithine nor citrulline could further increase maximal effect of arginine on root growth. Glycine and adenine increased arginine effect. Combination tests with glycine and adenine point to possibility these are metabolically related. The strong inhibition in growth rate and development of lateral roots by hydroxyproline was completely removed by casein hydrolysate, most active component proline: even with proline/hydroxyproline molar ratio of 10, slight inhibition still remained. Two dipeptides of hydroxyproline and glycine showed no inhibitory activity. Significance of arginine as key metabolite manifested by arginine analogue canavanine, a growth inhibitor even stronger than hydroxyproline, the effect of which was counteracted by arginine and presumed precursors: ornithine and citrulline. Azaguanine depressed both growth rate and nucleic acid content in decotylized seedlings; by adding 30 times larger quantities of adenine or hypoxanthine the growth inhibition was partly removed and nucleic acid content remained normal. ABSTRACT AUTHORS: W. W. Brentzel

CONCEPT CODE: Plant physiology - Growth substances 51514

INDEX TERMS: Major Concepts
Botany

INDEX TERMS: Chemicals & Biochemicals
creatine; glycocyamine; ribose; proline/hydroxyproline; adenine; guanine; ornithine; hydroxyproline; glutamic acid; indoleacetic acid; adenosine; arginine; uracil; amino acids; glycine; proline; citrulline; creatinine; urea; Azaguanine; dipeptides; hypoxanthine; nucleic acid; casein

ORGANISM: Classifier
Fungi 15000
Super Taxa
Plantae
Organism Name
yeast (common)
Taxa Notes
Fungi, Microorganisms, Nonvascular Plants, Plants

ORGANISM: Classifier
Leguminosae 26260
Super Taxa
Dicotyledones; Angiospermae; Spermatophyta; Plantae
Organism Name
pea (common)
Taxa Notes
Angiosperms, Dicots, Plants, Spermatophytes, Vascular Plants

ORGANISM: Classifier
Plantae 11000

Super Taxa
Plantae
Organism Name
plant (common)
Taxa Notes
Plants

REGISTRY NUMBER: 57-00-1 (creatine)
93781-19-2 (ribose)
73-24-5 (adenine)
73-40-5 (guanine)
616-07-9 (ornithine)
6912-67-0 (hydroxyproline)
617-65-2 (glutamic acid)
32536-43-9 (indoleacetic acid)
58-61-7 (adenosine)
7200-25-1 (arginine)
66-22-8 (uracil)
56-40-6 (glycine)
609-36-9 (proline)
372-75-8 (citrulline)
60-27-5 (creatinine)
57-13-6 (urea)
68-94-0 (hypoxanthine)

L37 ANSWER 21 OF 25 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

ACCESSION NUMBER: 1949:18766 BIOSIS Full-text
DOCUMENT NUMBER: PREV19492300018946; BA23:18946
TITLE: The degradation of glycocyamine by P. ovalis. Bacterial glycocyaminase and argininedihydrolase. Original Title: Sur la degradation de la glycocyamine par Pseudomonas ovalis. Glycocyaminase et argininedihydrolase bacteriennes.
AUTHOR(S): ROCHE, JEAN; GIRARD, HENRI; LA-COMBE, GABRIELLE; MOURGUE, MORCEL
CORPORATE SOURCE: Inst. Pasteur, Paris
SOURCE: BIOCHIM ET BIOPHYS ACTA, (1948) Vol. 2, No. 5, pp. 414-422.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: Unavailable
ENTRY DATE: Entered STN: May 2007
Last Updated on STN: May 2007

ABSTRACT:P. ovalis decomposing glycocyamine (I) at an optimal pH of 8-8.5 has been isolated from garden earth. P. ovalis hydrolyzes I, and, much more slowly, creatine to give urea. It decomposes arginine and arginic acid to NH3. The 1st reaction is brought about by a specific glycocyaminase (II) while the 2d is catalyzed by argininedihydrolase (III). II is inactive on arginase substrates, and is activated by Mn++ and Fe++, especially in the presence of cysteine and is inhibited by various agents capable of forming metal complexes. HI decomposes agmatine which is resistant to liver arginase. ABSTRACT AUTHORS: T. E. King

CONCEPT CODE: Bacteriology, general and systematic 30000
INDEX TERMS: Major Concepts
Bacteriology
INDEX TERMS: Parts, Structures, & Systems of Organisms
liver: digestive system
INDEX TERMS: Chemicals & Biochemicals
glycocyamine; arginase [EC 3.5.3.1]; glycocyaminase [EC 3.5.3.2]; arginine; argininedihydrolase; urea; metal; creatine; agmatine;

cysteine
ORGANISM: Classifier
Bacteria 05000
Super Taxa
Microorganisms
Organism Name
bacteria (common)
Taxa Notes
Bacteria, Eubacteria, Microorganisms
REGISTRY NUMBER: 9000-96-8 (arginase)
9000-96-8 (EC 3.5.3.1)
7200-25-1 (arginine)
57-13-6 (urea)
57-00-1 (creatine)
306-60-5 (agmatine)
3374-22-9 (cysteine)

L37 ANSWER 22 OF 25 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
ACCESSION NUMBER: 1949:2906 BIOSIS Full-text
DOCUMENT NUMBER: PREV19492300002928; BA23:2928
TITLE: The specificity of liver arginase.
Original Title: Sur la specificite de l'arginase hepatique.
AUTHOR(S): ROCHE, JEAN; MOURGUE, MARCEL
CORPORATE SOURCE: U. Marseille
SOURCE: BULL SOC CHIM BIOL, (1947) Vol. 29, No. 10/12, pp. 889-895.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: Unavailable
ENTRY DATE: Entered STN: May 2007
Last Updated on STN: May 2007
ABSTRACT:A considerable number of acids containing the guanidine group and also hydroxyl, thio and amino groups (for instance alpha-guanidine-beta-hydroxypropionic acid, p-hydroxyphenyl-alpha-guanidine propionic acid) were subjected to the action of dog liver arginase. None of them was hydrolysed, except arginic acid and the guanidine acetamide of glycine. Several guanidine alcohols and guanidine amines were also not ***hydrolysed.*** Agmatine (aminobutylguanidine) was not attacked by the enzyme, but this result was at variance with the findings of other workers. This also applies to the result obtained for guanidineacetic acid, which was not hydrolysed by arginase. The specificity of arginase did not seem to be conditioned only by the presence in the molecule of the substrate of the guanidine group and the carboxylic group (the latter being associated with an amino or hydroxylic group in alpha-position). These groups must be located a certain distance apart, and this "geometrical" condition appeared to be more important than the nature of the chain which carried the groups. The enzymatic activity was followed by determining the urea released during the reaction by the xanthydrol method. ABSTRACT AUTHORS: Gunnar Steensholt
CONCEPT CODE: Enzymes - General and comparative studies: coenzymes 10802
INDEX TERMS: Major Concepts
Enzymology (Biochemistry and Molecular Biophysics)
INDEX TERMS: Parts, Structures, & Systems of Organisms
liver: digestive system
INDEX TERMS: Chemicals & Biochemicals
alcohols; guanidineacetic acid; guanidine; alpha-guanidine-beta-hydroxypropionic acid; arginase [EC 3.5.3.1]; guanidine acetamide; glycine; amines; p-hydroxyphenyl-alpha-guanidine propionic acid; thio;

propionic acid; aminobutylguanidine; urea; xanthydrol
ORGANISM: Classifier
Canidae 85765
Super Taxa
Carnivora; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
dog (common)
Taxa Notes
Animals, Carnivores, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Vertebrates
REGISTRY NUMBER: 113-00-8 (guanidine)
9000-96-8 (arginase)
9000-96-8 (EC 3.5.3.1)
56-40-6 (glycine)
79-09-4 (propionic acid)
57-13-6 (urea)
90-46-0 (xanthydrol)

L37 ANSWER 23 OF 25 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
ACCESSION NUMBER: 1947:24200 BIOSIS Full-text
DOCUMENT NUMBER: PREV19472100024379; BA21:24379
TITLE: On the excretion of choline in urine.
AUTHOR(S): Borglin, Nils-Erik
CORPORATE SOURCE: U. Lund
SOURCE: ADA PHARMACOL ET TOXICOL, (1947) Vol. 3, No. Suppl. 1, pp. 1-123.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: Unavailable
ENTRY DATE: Entered STN: May 2007
Last Updated on STN: May 2007
ABSTRACT:The urinary excretion of choline by rats on various diets was detd. by acetylation and bio-assay on strips of rabbit intestine; the test is very specific; 0.25 a choline can easily be detd. For detn. in tissues these were extracted with alc., total choline being obtained after hydrolysis.
On a diet deficient in choline, excretion falls rapidly to very low values before any other symptoms of deficiency appear. With excess choline intake excretion parallels the amt. given; about 0.25% of the choline in the diet is excreted as free choline. On still larger intakes this % is increased. When lipotropic factors (proteins, methionine and betaine) are added to the diet, the % of choline excreted is increased 20-50%. Dietary addition of ethanolamine and especially of diethylethanolamine, may increase choline excretion 10-fold. Factors increasing the requirement of choline (fat, thiamine, nicotinic acid, glycocyamine) reduce choline excretion; compounds containing non-labile methyl groups, e.g., creatine, have no effect. The choline content of more than 80 samples of common Swedish foods was detd.; more than 1 mg. cho-line/kg. was found in egg-yolk, liver, brain, yeast, kidney. 0.5-1 mg. in meat, fish, whole wheat grains, barley, and less than 0.1 mg./kg. in margarine, winter milk, eggwhite, potatoes; about 2% of the total choline is free. An avg. Swedish diet is estimated to contain about 450 mg. of choline/day, 50% in eggs, 20% in cereal products, 10% in meat and fish and 7% in vegetables. Normal adults excrete 2-4 mg./day, 0.5-1% of that present in the food. In 2-9 mo. old infants the relations are the same. During a 24-hr. fast choline excretion is 50% of the avg., the day after, 80%.. In ;f hospitalized patients on ulcer diets, the excretion of choline follows the dietary choline rather closely. When choline is added, 0.1-0.3% of it is excreted. ABSTRACT AUTHORS: Erik Jacobsen
CONCEPT CODE: Nutrition - General studies, nutritional status and methods 13202

INDEX TERMS: Major Concepts
Nutrition

INDEX TERMS: Parts, Structures, & Systems of Organisms
egg-yolk: embryonic structure; tissues; kidney: excretory system; liver: digestive system; brain: nervous system; intestine: digestive system; urine: excretory system

INDEX TERMS: Chemicals & Biochemicals
choline/day; choline; thiamine; diethylethanolamine; proteins; nicotinic acid; glycocyamine; ethanolamine; betaine; creatine; methionine

ORGANISM: Classifier
Angiospermae 25200
Super Taxa
Spermatophyta; Plantae
Organism Name
vegetables (common)
cereal (common)
Taxa Notes
Angiosperms, Plants, Spermatophytes, Vascular Plants

ORGANISM: Classifier
Fungi 15000
Super Taxa
Plantae
Organism Name
yeast (common)
Taxa Notes
Fungi, Microorganisms, Nonvascular Plants, Plants

ORGANISM: Classifier
Gramineae 25305
Super Taxa
Monocotyledones; Angiospermae; Spermatophyta; Plantae
Organism Name
barley (common)
wheat (common)
Taxa Notes
Angiosperms, Monocots, Plants, Spermatophytes, Vascular Plants

ORGANISM: Classifier
Leporidae 86040
Super Taxa
Lagomorpha; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
rabbit (common)
Taxa Notes
Animals, Chordates, Lagomorphs, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Vertebrates

ORGANISM: Classifier
Muridae 86375
Super Taxa
Rodentia; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
rats (common)
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Rodents, Vertebrates

ORGANISM: Classifier
Pisces 85200
Super Taxa
Vertebrata; Chordata; Animalia

Organism Name
fish (common)
Taxa Notes
Animals, Chordates, Fish, Nonhuman Vertebrates, Vertebrates
ORGANISM: Classifier
Solanaceae 26775
Super Taxa
Dicotyledones; Angiospermae; Spermatophyta; Plantae
Organism Name
potatoes (common)
Taxa Notes
Angiosperms, Dicots, Plants, Spermatophytes, Vascular Plants
REGISTRY NUMBER: 62-49-7 (choline)
59-43-8 (thiamine)
59-67-6 (nicotinic acid)
141-43-5 (ethanolamine)
107-43-7 (betaine)
57-00-1 (creatine)
63-68-3 (methionine)

L37 ANSWER 24 OF 25 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
ACCESSION NUMBER: 1938:14972 BIOSIS Full-text
DOCUMENT NUMBER: PREV19381200015832; BA12:15832
TITLE: Activation of enzymes. V. The specificity of arginase and the non-enzymatic hydrolysis of guanidino compounds. Activating metal ions and liver arginase.
AUTHOR(S): HELLERMAN, LESLIE; STOCK, C. CHESTER
SOURCE: JOUR BIOL CHEM, (1938) Vol. 125, No. 2, pp. 771-793.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: Unavailable
ENTRY DATE: Entered STN: May 2007
Last Updated on STN: May 2007
ABSTRACT:Exploratory activity-pH curves for certain preparations of liver arginase revealed in greater detail some of the aspects of the enzyme action in the presence of heavy metal activator ions. The character and quantity of such ions present in crude enzyme prepns. might account in part for divergences in the pH-activity curves of certain enzymes as developed by different workers. The data taken with other observations suggested the participation of the [alpha]-amino group of d-arginine in the orientation of enzyme to substrate through metallo complex formation. An investigation of the specificity of arginase (with [delta]-guanidinovaleric and argininic acids), particularly in relation to the role of the [alpha]-amino group of d-arginine raised the question to what extent enzyme specificity might be a matter of degree rather than an absolute property. A comparison of the characteristics of the enzymatic hydrolysis of d-arginine and of the controlled alkaline (non-enzymatic) hydrolysis of d-arginine, [delta]-guanidinovaleric acid, argininic acid, glycocyamine, and guanidine disclosed important distinctions in the differently catalyzed processes. The unique qualities in the action of arginase suggested a correlation of the enzyme action with the alteration of resonance in the guanidinium ion of d-arginine. ABSTRACT
AUTHORS: L. Hellerman
CONCEPT CODE: Physiology - General 12002
INDEX TERMS: Major Concepts
Physiology
INDEX TERMS: Parts, Structures, & Systems of Organisms
liver: digestive system

INDEX TERMS: Chemicals & Biochemicals
glycocyamine; extent enzyme; heavy metal; guanidinium; [delta]-guanidinovaleric acid; metal; guanidine; arginase [EC 3.5.3.1]
REGISTRY NUMBER: 25215-10-5 (guanidinium)
113-00-8 (guanidine)
9000-96-8 (arginase)
9000-96-8 (EC 3.5.3.1)

L37 ANSWER 25 OF 25 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
ACCESSION NUMBER: 1938:13574 BIOSIS Full-text
DOCUMENT NUMBER: PREV19381200014410; BA12:14410
TITLE: Zur Spezifitat der Arginase.
AUTHOR(S): FELIX, K.; SCHNEIDER, H.
SOURCE: HOPPE SEYLER S ZEITSCHR PHYSIOL CHEM, (1938) Vol. 255, No. 1/3, pp. 132-144.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: Unavailable
ENTRY DATE: Entered STN: May 2007
Last Updated on STN: May 2007
ABSTRACT:It was necessary for the substrate to have free guanidine and carboxyl groups. Every change in these interfered with arginase action. Enzyme preps. were obtained from livers of hog, ram, cattle, rabbit, and dog. An acid radical, peptide group, or methyl or hydroxyl groups could be substituted in the [alpha] amino group of the substrate. The length of the carbon chain varied. For all the derivatives of arginine tested, the optimum pH for arginase action was 7, with a range, of 7-8. Karashima's finding that liver extract hydrolyzed guanidine-acetic acid was confirmed. Arginine and guanidine-acetic acid were probably hydrolyzed by different enzymes. ABSTRACT AUTHORS: W. N. Berg
CONCEPT CODE: Physiology - General 12002
INDEX TERMS: Major Concepts
Physiology
INDEX TERMS: Parts, Structures, & Systems of Organisms
liver: digestive system
INDEX TERMS: Chemicals & Biochemicals
arginine; carbon; guanidine-acetic acid; different enzymes; guanidine; arginase [EC 3.5.3.1]
ORGANISM: Classifier
Bovidae 85715
Super Taxa
Artiodactyla; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
ram (common)
cattle (common)
Taxa Notes
Animals, Artiodactyls, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Vertebrates
ORGANISM: Classifier
Canidae 85765
Super Taxa
Carnivora; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
dog (common)
Taxa Notes
Animals, Carnivores, Chordates, Mammals, Nonhuman

Vertebrates, Nonhuman Mammals, Vertebrates

ORGANISM: Classifier
Leporidae 86040
Super Taxa
Lagomorpha; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
rabbit (common)
Taxa Notes
Animals, Chordates, Lagomorphs, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Vertebrates

ORGANISM: Classifier
Suidae 85740
Super Taxa
Artiodactyla; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
hog (common)
Taxa Notes
Animals, Artiodactyls, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Vertebrates

REGISTRY NUMBER: 7200-25-1 (arginine)
7440-44-0 (carbon)
113-00-8 (guanidine)
9000-96-8 (arginase)
9000-96-8 (EC 3.5.3.1)

FILE 'HOME' ENTERED AT 15:33:27 ON 15 JUL 2009

SEARCH HISTORY

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=> d his nofile

     (FILE 'HOME' ENTERED AT 15:02:42 ON 15 JUL 2009)

     FILE 'REGISTRY' ENTERED AT 15:02:57 ON 15 JUL 2009
                E GLYCOCYAMINE/CN
L1             1 SEA SPE=ON  ABB=ON  GLYCOCYAMINE/CN

     FILE 'REGISTRY' ENTERED AT 15:03:57 ON 15 JUL 2009
                D IDE
L2            32 SEA SPE=ON  ABB=ON  352-97-6/CRN

     FILE 'CAPLUS' ENTERED AT 15:05:33 ON 15 JUL 2009
L3           936 SEA SPE=ON  ABB=ON  L1
L4            41 SEA SPE=ON  ABB=ON  L2
L5           967 SEA SPE=ON  ABB=ON  (L3 OR L4)

     FILE 'REGISTRY' ENTERED AT 15:05:44 ON 15 JUL 2009
L6             1 SEA SPE=ON  ABB=ON  GLYCINE/CN

     FILE 'CAPLUS' ENTERED AT 15:05:53 ON 15 JUL 2009
L7         68444 SEA SPE=ON  ABB=ON  L6
L8            82 SEA SPE=ON  ABB=ON  L5(L)RACT/RL
L9          4058 SEA SPE=ON  ABB=ON  L6/P
L10            0 SEA SPE=ON  ABB=ON  L8 AND L9
L11          160 SEA SPE=ON  ABB=ON  L5 AND L7
L12           12 SEA SPE=ON  ABB=ON  L8 AND L7
                 D SCAN
L13           14 SEA SPE=ON  ABB=ON  L9 AND L5
                 D SCAN TI HITIND
                 E HYDROLY/CT
                 E E15+ALL
L14       292352 SEA SPE=ON  ABB=ON  HYDROLY?/OBI
L15           21 SEA SPE=ON  ABB=ON  L5 AND L14
                 D SCAN TI HITIND
L16          100 SEA SPE=ON  ABB=ON  L1/P OR L2/P
L17           18 SEA SPE=ON  ABB=ON  L5 AND L14 NOT L16
                 D SCA TI HITIND
L18           35 SEA SPE=ON  ABB=ON  L5(L)(INHIBITION/OBI OR CYLINDROSPERMOPSIN/
                 OBI OR ACYLATION/OBI OR DAVIDIGENIN/OBI OR CHLORINATION/OBI)
L19           12 SEA SPE=ON  ABB=ON  L17 NOT L18

     FILE 'BIOSIS' ENTERED AT 15:21:13 ON 15 JUL 2009
L20          200 SEA SPE=ON  ABB=ON  L1
L21          449 SEA SPE=ON  ABB=ON  BETA!YAMINE OR GLYCOCYAMINE OR GUANIDIN!ACE
                 TIC OR ((GUANIDIN# OR GUANIDYL)(W) ACETIC) OR GUANIDYLACETIC
                 OR AMIDINOGLYCINE OR NSC(W)(1901 OR 227847 OR 26360)
L22        85972 SEA SPE=ON  ABB=ON  GLYCINE
L23       177055 SEA SPE=ON  ABB=ON  HYDROLY?
L24           17 SEA SPE=ON  ABB=ON  (L20 OR L21) AND L23
L25            7 SEA SPE=ON  ABB=ON  (L20 OR L21) AND L23 AND L22
                 D SCAN
L26           48 SEA SPE=ON  ABB=ON  (?SYNTHESI? OR FORM? OR PRODUC?)(2A)(L20
                 OR L21)
L27           14 SEA SPE=ON  ABB=ON  L24 NOT L26
                 D SCAN

     FILE 'STNGUIDE' ENTERED AT 15:28:03 ON 15 JUL 2009
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     FILE 'PASCAL, BIOTECHNO, ESBIOBASE, LIFESCI' ENTERED AT 15:29:22 ON 15
     JUL 2009
L28          220 SEA SPE=ON  ABB=ON  BETA!YAMINE OR GLYCOCYAMINE OR GUANIDIN!ACE
                 TIC OR ((GUANIDIN# OR GUANIDYL)(W) ACETIC) OR GUANIDYLACETIC
                 OR AMIDINOGLYCINE OR NSC(W)(1901 OR 227847 OR 26360)
L29       107271 SEA SPE=ON  ABB=ON  GLYCINE
L30       257737 SEA SPE=ON  ABB=ON  HYDROLY?
L31       482505 SEA SPE=ON  ABB=ON  DEGRAD?
L32            0 SEA SPE=ON  ABB=ON  L28(3A) (L30 OR L31)
L33            0 SEA SPE=ON  ABB=ON  L28(5A) (L30 OR L31)
L34            6 SEA SPE=ON  ABB=ON  L28 AND (L30 OR L31)
                 D SCAN
L35           38 SEA SPE=ON  ABB=ON  L28 AND L29
L36            1 SEA SPE=ON  ABB=ON  L28 AND L29 AND (L30 OR L31)
                 D SCAN
                 D KWIC
                 D BIB

     FILE 'STNGUIDE' ENTERED AT 15:31:39 ON 15 JUL 2009

     FILE 'CAPLUS' ENTERED AT 15:32:51 ON 15 JUL 2009
                 D QUE L19

     FILE 'BIOSIS' ENTERED AT 15:32:51 ON 15 JUL 2009
                 D QUE L27

     FILE 'PASCAL, BIOTECHNO, ESBIOBASE, LIFESCI' ENTERED AT 15:32:52 ON 15
     JUL 2009
                 D QUE L36

     FILE 'BIOTECHNO, CAPLUS, BIOSIS' ENTERED AT 15:32:53 ON 15 JUL 2009
L37           25 DUP REM L36 L19 L27 (2 DUPLICATES REMOVED)
                      ANSWER '1' FROM FILE BIOTECHNO
                      ANSWERS '2-13' FROM FILE CAPLUS
                      ANSWERS '14-25' FROM FILE BIOSIS
                 D IALL 1
                 D IBIB ABS HITIND 2-13
                 D IALL 14-25

     FILE 'HOME' ENTERED AT 15:33:27 ON 15 JUL 2009

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